A STUDY TO ASSESS THE EFFECTIVENESS OF VIDEO ASSISTED TEACHING ON SAFETY MEASURES WHILE HANDLING CHEMOTHERAPY DRUGS ON KNOWLEDGE, ATTITUDE AND PRACTICE OF NURSES IN SELECTED HOSPITAL AT KANYAKUMARI DISTRICT

A DISSERTATION SUBMITTED TO THE TAMILNADU DR. M.G.R. MEDICAL UNIVERSITY, CHENNAI, IN PARTIAL FULFILLMENT OF REQUIREMENT FOR THE DEGREE OF MASTER OF SCIENCE IN NURSING

OCTOBER - 2018

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APPROVED BY THE DISSERTATION COMMITTEE ON: 05/06/2017

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Submitted in partial fulfilment of the requirement for the degree of Master of Science in Nursing, the Tamil Nadu Dr. M.G.R. Medical University, Chennai

……... ……

Internal Examiner **External Examiner**

OCTOBER – 2018

DECLARATION

I, the investigator II year M.Sc Nursing student of Christian College of Nursing, Neyyoor do hereby declare that this dissertation titled **"A study to assessthe effectiveness of video assisted teaching on safety measures while handling chemotherapy drugs on knowledge, attitude and practice of nurses in selected hospital at Kanyakumari District"** has not been submitted by me, for the award of any degree, diploma, title or recognition before.

Investigator

Place: Neyyoor

CERTIFICATE

Certified that the thesis entitled **"A study to assess the effectiveness of video assisted teaching on safety measures while handling chemotherapy drugs on knowledge, attitude and practice of nurses in selected hospital at Kanyakumari District ",** is a bonafide work by Ms. A.Achsah Merlight , II year M.Sc Nursing in partial fulfilment of the requirements for the degree of Master of Science in Nursing under the Tamil Nadu DR.M.G.R Medical University ,Chennai.

Date: **Signature of the Principal**

Place: Neyyoor

CERTIFICATE

This is to certify that this dissertation entitled **"A study to assess the effectiveness of video assisted teaching on safety measures while handling chemotherapy drugs on knowledge, attitude and practice of nurses in selected hospital at Kanyakumari District ",** is a bonafide work by Ms.A.Achsah Merlight, II year M.Sc Nursing student from Christian College of Nursing, Neyyoor submitted in partial fulfillment of the university rules and regulations for award of Master of Science in Nursing under my guidance and supervision during the academic year 2017-2018.

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The Lord will perfect that which concerns me (Psalm 138:8)

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ABSTRACT

The purpose of the study to assess the effectiveness of video assisted teaching on safety measures while handling chemotherapy drugs on knowledge, attitude and practice of nurses in selected hospital at kanyakumari district was conducted in partial fulfilment of the requirement for the degree of Master of Science in Nursing during the year 2018 in Christian College of Nursing, Neyyoor, which is affiliated to the Tamil Nadu Dr. M.G.R. Medical University, Chennai.

The following objectives were formulated for the study.

- To assess the level of knowledge, attitude and practice of nurses on safety measures while handling chemotherapy drugs before and after video assisted teaching.
- To compare the level of knowledge, attitude and practice of nurses on safety measures while handling chemotherapy drugs before and after video assisted teaching.
- To associate the level of knowledge, attitude and practice of nurses on safety measures while handling chemotherapy drugs with selected demographic variables such as age, gender, marital status, professional qualification, duration of work with chemotherapy drugs.

The hypotheses formulated for the present study were

H_1: There will be a significant difference between level of knowledge, attitude and practice of nurses regarding safety measures while handling of chemotherapy drugs before and after video assisted teaching.

H_2: There will be a significant association between pre test level of knowledge, attitude and practice of nurses regarding safety measures while handling chemotherapy drugs with selected demographic variables.

The purpose of the study was to assess the knowledge, attitude and practice of nurses on safety measures while handling chemotherapy drugs before and after video assisted teaching. The study was conducted in International Cancer Centre at Kanyakumari medical mission Hospital, Neyyoor. Purposive sampling technique was adopted. Samples were selected on the basis of inclusion criteria. Samples used were 30 staff nurses who were working in the international cancer centre. The data collection tools developed for generating the data, were a structured knowledge questionnaire to assess the knowledge of nurses regarding safety measures while handling chemotherapy drugs, four point likert attitude scale to assess the attitude of nurses about safety measures while handling chemotherapy drugs and observational checklist to assess the practice of nurses regarding safety measures while handling chemotherapy drugs. The study was based on the J.W Kenny's open system model. The research design adapted for this study was one group pretest post test design. The feasibility of the study and the refinement of tools were assessed through pilot study. The data collection for the main study was done from 22/1/18 to 03/3/18 statistical analysis was done by using both descriptive and inferential statistics.

Major findings of the study were summarized as follows

1. Regarding the knowledge score of staff nurses 56.7% had adequate knowledge regarding safety measures while handling of chemotherapy drugs. The mean knowledge score was 9.7±1.9.

2. Regarding the Attitude score of staff nurses 90.0% had favourable attitude regarding safety measures while handling of chemotherapy drugs. The mean attitude score was 27.1±2.5.
3. Regarding practice score of staff nurses 100% had poor practice regarding safety measures while handling of chemotherapy drugs. The mean practice score was 3.9±0.6.
4. There is no association between level of knowledge of nurses on safety measures while handling chemotherapy drugs and their selected demographic variables**.**
5. There is no association between level of attitude of nurses on safety measures while handling chemotherapy drugs and their selected demographic variables.
6. There is no association between level of practice of nurses on safety measures while handling chemotherapy drugs and their selected demographic variables**.**

CONCLUSION

This study reveals that the video assisted teaching was effective in improving the knowledge, attitude and practice of nurses regarding safety measures while handling chemotherapy drugs. Though knowledge, attitude and practice of nurses were significantly improved with highest mean improvement, there was some lagging noted because of unavailability of adequate resources in the oncological unit. So we strongly recommend to upgrade the clinical area with adequate resources to maintain safe practices and to avoid harmful effects from chemotherapy drugs.

Based on the findings of the study it is recommended that,

1. The study can be done with large number of samples for better generalization.

2. The same study can be conducted to find out the factors responsible for improper practice on safety measures while handling chemotherapy drugs .
3. The study can be conducted among the nursing students in the clinical field.
4. A similar study can be conducted in other hospital settings & ward settings.

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CHAPTER I

INTRODUCTION

" Avoid the worst put safety First"

Cancer is a group of disease characterized by uncontrolled growth and spread of abnormal cells. If the spread is not controlled, it can result in death **(American Cancer Society (ACS).**

Cancer is a term for diseases in which abnormal cells divide without control and can invade nearby tissues and other parts of the body through blood and lymphatic systems**(National Cancer Institute (NCI,2015).**

Worldwide, more than 11 million new cases of cancer are diagnosed every year, and that number is expected to rise to 16 million by 2020. In India, cancer is the second most common disease at the year of 2015, 1 crore new cases have been diagnosed and by the year 2020 cancer cases is going to be increased to 1 crore 20 lakhs according to **Indian Council of Medical Research,(2017).**

About 88,847 new cancer cases are diagnosed in Tamilnadu by the year of 2016. In Tamilnadu the most common cases that affect are those of stomach, lung and mouth and among women it is breast cancer **(Tamilnadu Cancer Registery Project (TNCRP, 2016).**

The treatments for cancer are chosen depending on the type, location, and grade of the cancer as well as the person's health and wishes. The treatment intent may be curative or not curative. Chemotherapy is the use of cytotoxic drugs in the treatment of cancer. It is one of the four treatment modalities (the other being

surgery, radiation therapy, and biotherapy) that provide cure, control, or palliation **(Martha E. Langhorne et al., 2007).**

Chemotherapy is the treatment of cancer by the use of chemical substances to kill tumour cells by interfering with cellular function and cellular reproduction **(Brunner 2011).**

Chemotherapy may be used to achieve control over the disease by preventing or slowing down the growth of a malignant tumour and thus prolonging survival and it may be used palliatively in the management of symptoms such as pain or breathlessness **(Jessica Corner et al., 2008).**

The primary aim of chemotherapy is to have a systemic effect on cancer cells and therefore prevent cell replication and halt cell division. Consequently healthy cells as well as malignant cells will be affected hence the patients can anticipate certain side effects of their treatment in areas of high cell division, such as bone marrow depression, gastrointestinal disturbance and alopecia. These side effects are usually reversible depending on the drug type and total dose given as well as the patients existing health. Chemotherapy can be used in a number of ways and also in conjunction with other anticancer treatments. It can be used prior to surgery to reduce the size of a tumour and therefore minimize the amount of surgical intervention required **(Nora Kearney et al., 2006).**

Today cancer patients are diagnosed earlier than in the past and many receive multiple courses of chemotherapy for a longer period of time. Chemotherapy administration is primarily the responsibility of a registered nurse who has specific knowledge about the pharmacology and dosing of the drug as well as competence in

preparation, administration and management of toxicity. Many antineoplastic drugs are known to be carcinogenic , teratogenic and mutagenic to humans **(Ben Ami et al 2001; TARC 1976) .**

The toxicity of anti neoplastic drugs has been well known since these were introduced in the 1940's. Because most antineoplastic drugs are non selective in their mechanism of action, they affect non cancerous cells as well as cancerous cells resulting in well documented side effects.

During the 1970's evidence came to light indicating health care workers may be at risk of harmful effects from antineoplastic drugs as a result of occupational exposure. Since that time reports from several countries have documented drug contamination of the workplace, identified drugs in the urine of healthcare workers and measured genotoxic responses in workers. Evidence also exists of teratogenic and adverse reproductive outcomes and increased cancer in health workers.

Acute health effects associated with occupational exposure include skin rashes, sore throat, chronic cough, dizziness, headache, eye irritation, hair loss, and allergic reactions **(Valanis BG, Vollmer 1993).** Reproductive studies of female health care workers exposed to these drugs have shown infertility, miscarriage, birth defects, and other adverse pregnancy outcomes. Oncology nurses exposed to chemotherapeutic drugs have increased risk of leukemia and other cancers **(Lawson CC[2]2012).** An increased frequency of genotoxicity biomarkers including chromosomal aberrations were reported in health care workers who handle chemotherapy drugs **(Suspiro A, 2011).**

Health care workers who handle antineoplastic drugs can be exposed to low doses of the drug by direct contact, inhalation and injection and could be at risk for some of the same side effects associated with the therapy. It is essential that any health care provider working with cytotoxic drugs follow the occupational safety and health administration guidelines to prevent injury to self and others **(Phipps 2007).**

Exposure and administration in healthcare practice, nurses are the main groups that are exposed to these drugs in hospital and ambulatory care settings **Pethran et al, 2002).** Exposure may result from direct contact via skin or eyes and inhalation of droplets aerosolization mainly because of inappropriate hygienic behaviour such as eating, drinking during preparation, administration or disposal of chemotherapy drug **(American Society of Hospital Pharmacists, 1990).**

Occupational exposure from hazardous drugs may pose a significant risk to healthcare workers. Since the mid1980s, several organizations have published recommended hazardous drug handling guidelines. Most recently, the National Institute of Safety and Health **(NIOSH)** published an alert that presents the most updated recommendations for hazardous drug handling. Implementing these recommendations may prevent or reduce the inadvertent exposure to these drugs, thus minimizing the potential adverse health effects associated with their handling **(Susan Martin 2005).**

It is therefore imperative that healthcare workers are aware of the potential hazards of antineoplastic agents and employ the recommended precautions to minimise exposure. Potential risks associated with exposure to cytotoxic drugs for healthcare staff. The safe-handling precautions required in the storage, preparation,

transport, administration and waste disposal of cytotoxic drugs are presented **(Bojano JM Steege 2015).**

Educational programmes about cancer and safe handling of chemotherapeutic drugs provide the nurses to safeguard themselves as well as patients. It includes guidelines of administration, and manifestation of toxicity, appropriate intervention. In addition the health care professional must be familiar with the medication, mode of action, side effects an appropriate administration and disposal procedure.

NEED FOR THE STUDY

Drugs have a successful history in treating illnesses, and they are responsible for many of our medical advances. However, virtually all drugs have side effects associated with their use by patients, and both patients and nurses who handle them are at risk of suffering these effects that might result from exposure to even very small concentrations of certain hazardous drugs. Many antineoplastic drugs are known to be carcinogenic, teratogenic and mutagenic to humans. There is a potential occupational exposure risk to cytotoxic drugs.

Nurses are among the main groups of professionals that are exposed to these drugs in patient care settings. Although the potential therapeutic benefits of hazardous drugs outweigh the risks of side effects for ill patients, exposed nurses risk these same side effects with no therapeutic benefit. Most drugs are given to the patient through intra venous drip but some drugs are pushed via a syringe. In either case, drug administration poses a risk to the nurses from a spill or release from the IV bag or through a pressured release during the drug push. Drug administration to

patients requires wearing personal protective equipment's in the event of a spill or other unplanned release **(American cancer society, 2016).**

During the past 30 years, professional organizations and government agencies have developed guidelines to protect healthcare workers from adverse effects of occupational exposure to antineoplastic drugs.

In 2004, the national institute for occupational safety and health **(NIOSH)** published an alert reviewing the most recent information available and promoting a program of safe handling during their uses.

When health risks to exposed workers became a recognized safety concern, professional practice organizations (**Oncology Nursing Society**) and government agencies **(NIOSH-2013, OSHA – 2013)** published guidelines for the safe handling of hazardous drugs.

Based on above information it is evident that the nurses are at greater risk of developing adverse effects due to occupational exposure to antineoplastic drugs. Apart from this during researcher's clinical exposure have noticed that nurses are inadequately protected due to poor knowledge and lack of clear guidelines of safe handling of antineoplastic drugs. So researcher felt that is essential to assess the knowledge and to improve their existing knowledge on safety measures while handling chemotherapy antineoplastic drugs among staff nurses.

STATEMENT OF THE PROBLEM

A study to assess the effectiveness of video assisted teaching on safety measures while handling chemotherapy drugs on knowledge, attitude and practice of nurses in selected hospital at Kanyakumari district.

OBJECTIVES

- To assess the level of knowledge, attitude and practice of nurses on safety measures while handling chemotherapy drugs before and after video assisted teaching.
- To compare the level of knowledge, attitude and practice of nurses on safety measures while handling chemotherapy drugs before and after video assisted teaching.
- To associate the level of knowledge, attitude and practice of nurses on safety measures while handling chemotherapy drugs with selected demographic variables such as age, gender, marital status, professional qualification, duration of work with chemotherapy drugs.

HYPOTHESES:

H_1 : There will be a significant difference between level of knowledge, attitude and practice of nurses regarding safety measures while handling chemotherapy drugs before and after video assisted teaching.

H_2 : There will be a significant association between pre test level of knowledge, attitude and practice of nurses regarding safety measures while handling chemotherapy drugs with selected demographic variables.

OPERATIONAL DEFINITIONS

Effectiveness

Effectiveness is the capacity of producing a desired result or the ability to produce desired output (or) it is a change in knowledge, attitude and skill.

In this study, effectiveness refers to change in knowledge, attitude and practice after video assisted teaching on safety measures while handling chemotherapy drugs as measured by knowledge, attitude questionnaire, observational checklist and its scores.

Knowledge

It means information and skills gained through experience and education.

In this study knowledge refers to the level of understanding of nurses regarding safety measures while handling of chemotherapy drugs which is measured by structured knowledge questionnaire and its scores.

Attitude

It means the way of thinking or feeling about someone or something **(Elliot.J, 2002).**

In this study it refers to that the thinking of nurses regarding safety measures while handling chemotherapy drugs, which is measured by four point likert scale and its scores.

Practice

Performing an activity repeatedly or regularly in order to acquire, improve or maintain proficiency in it.

In this study, practice refers to the activities performed by the nurses while handling chemotherapy drugs as measured by using observational checklist and its scores.

Handling

Act of doing something with the hands or to perform in a particular way when it is handled by the hands.

In this study, handling refers to the activities carried out by the nurses while preparation, administration and disposal of chemotherapy drugs.

Safety measures

It means a measure which is taken to increase or ensure safety or protection from dangerous environment or situation or hazardous.

Actions taken to protect personal from such known hazards.

In this study, it refers to nursing actions taken to prevent themselves to protect from the harmful effects of chemotherapy while handling.

Chemotherapy

Chemotherapy is a type of cancer treatment that uses drugs to destroy cancer cells. Chemotherapy is a category of cancer treatment that uses one or more anti cancer drugs as a part of the standardized chemotherapy regimen.

In this study, it is refers the drugs which is used to treat cancer patients as the part of treatment.

Video assisted teaching

It means to provide an education or information with the help of video.

In this study it refers to giving an education to nurses regarding safety measures while handling chemotherapy drugs with the help of video to prevent hazardous effects of chemotherapy.

ASSUMPTIONS

Staff nurses may have some knowledge regarding safety measures while handling chemotherapy drugs.

Staff nurses are at a risk for developing adverse effects due to occupational exposure to chemotherapy drugs.

Video assisted teaching can enhance the knowledge, attitude and practice of nurses regarding safety measures while handling chemotherapy drugs.

LIMITATIONS

- A study is limited to 6 weeks.
- This study is limited to staff nurses who are working in cancer hospitals.

CHAPTER – II

REVIEW OF LITERATURE

A literature review is a written summary of the state of existing knowledge on a research problem. (Polit 2008)

A literature review provides the reader with the new knowledge on the topic and illuminates the significance of the new study.

For the purpose of logical sections, the chapter is divided into three sections.

A) Literature related to Knowledge and Attitude on Chemotherapy

B) Literature related to practice on Chemotherapy

C) Literature related to hazards of chemotherapy drugs

D) Literature related to safety measures while handling chemotherapy drugs

I. Literature related to Knowledge and Attitude on Chemotherapy

Abdul Ali Shahrasbi et al.,(2014) was conducted a cross-sectional study by using a self-administered questionnaire among 225 oncology nurses in nine specialized cancer centres in Tehran, Iran is to evaluate the healthcare's understanding on occupational exposure to cytotoxic drugs and its side effects. The questionnaires were constructed on knowledge attitude and checklist on handling cytotoxic drugs. The results indicate 45% of nurses had adequate level of knowledge regarding risk of chemotherapy exposure. The study concludes that the level of knowledge about antineoplastic agents is high among nurses, along with the level of PPE (Personal Protective Equipment) use, medical surveillance and employee

training seems to be lagging behind. However, the usages of safety measures are to be as recommended by the institution to prevent from toxic exposure.

Ramanad Chaudhary (2012) conducted a study to evaluate the knowledge of nurses regarding the way of exposure to cytotoxic drugs and to determine the patterns of use of personnel protective equipments while handling anti neoplastic cytotoxic chemotherapeutic agents. The study was carried out on 125 nurses of Nepal. The random sampling technique was used to select the study subjects and knowledge was assessed using structured questionnaire. The study findings revealed that the level of knowledge of the nurses on handling anti neoplastic chemotherapy drugs is not satisfactory.

Meral Turk(2004) conducted an analytic cross sectional study to evaluate the knowledge, Attitude and safe behaviour of the nurses on the health effects and the routes of exposure to chemotherapy drugs to clarify the protective measures while handling these agents and to determine the knowledge on clinical Attitudes, Behaviour and Actual usage of safety measures. 137 nurses who work with the cytotoxic drugs were participated in the study. Two self –reported questionnaires were used in order to collect the data of the study. The study finding showed that the staff nurses handling chemotherapy drugs don't have a satisfactory level of knowledge regarding risk factors and safety measures. This study revealed the necessity of the work environment and the availability of the protective equipment.

II. Literature related to practice on Chemotherapy

K.Karpagam (2017) conducted a study to assess the effectiveness of planned teaching programme on safe handling of chemotherapy drugs among staff nurses in oncology ward. 30 samples were selected by using convenient sampling

technique. The investigator assessed the pretest level of knowledge by using questionnaire. Then the nurses were administered planned teaching programme regarding safe handling of chemotherapy drugs. After that 7th day post test was conducted. The data were analysed by using descriptive and inferential statistics. The results shows there is a difference in the level of knowledge before and after administration of planned teaching programme, it was statistically significant at ($p<0.001$). The study concludes that planned teaching programme effective in improving the nurses knowledge in administering chemotherapy drugs.

Najma Khan et al., (2012) was conducted a qualitative study to assess knowledge, skill and attitude of oncology nurses in chemotherapy administration at two oncology units of tertiary Hospital Rawalpindi. A single group pre and post-test study design was used on 35 nurses by using verity's tools such as knowledge assessment tool, attitude scale and observation checklist for skill (about 1-1:30 hours). The mean scores of knowledge were calculated by Cochran's Q test showed that knowledge scores have significantly increased with educational training (p value < 0.001) the difference in the attitude of the nurses was not found to be statistically significant. The results show that the educational session was found to be effective in improving the knowledge of nurses, however there was no significant change in their attitudes. Hence the study concludes that knowledge is the weakest component and attitude is strongest component of oncology nurses competencies in chemotherapy administration.

Dr. Theresa Wiseman et al., (2005) conducted A multi-method study to examine the knowledge and performance on chemotherapy administration among 526 trained nurses across the five London Cancer Networks. The study consists of

two component one was to investigate nurses perspectives of administering chemotherapy to patients with cancer and second one is to develop an understanding, in context, of the work of nurses administering chemotherapy in an outpatient clinic. The results show that overall nurses appear to have a positive attitude towards chemotherapy by realizing that chemotherapy is a more involved process than just administering intravenous drugs and have an awareness of the safety issues and consequences of administration. It concludes the evidence that nurses must have formal education and support in clinical practice before taking on this role. Experience in this process has positively influenced not only nurses attitudes towards chemotherapy but also their interactions with patients and colleagues.

III. Literature related to hazards of chemotherapy drugs

Soheir Mohamed (2015) conducted a descriptive study to evaluate the handling practices of oncology nurses during chemotherapy preparation and administration in Menoufia oncology hospital and to identify potential risk factors that may predispose nurses to chemotherapy hazards. A study group of 30 oncology nurses were assessed with interviewing questionnaire that covering socio demographic data, knowledge related to chemotherapy preparation and administration, health hazards related to exposure to chemotherapy, use of protective measures while dealing with drugs and barriers of use it. And using observational checklist, nurses' actual practices of preparation and administration of chemotherapy were assessed. The study results shows the nurses did not comply with recommended safety behaviour (rules and regulations) due to workload, lack of knowledge and lack of equipment and facilities. This study revealed poor safety

protective measures among nurses handling cytotoxic drugs which had negative effect on their health. The study recommends the need for nurse's educational programme to increase their awareness and knowledge regards use of chemotherapy and protection from its health hazards.

Chan Huan Keat et al., (2013) was conducted A prospective interventional study in a General Hospital, Malaysia a single group of 96 nurses actively participated for assessing the change of nurses safety-related knowledge as well as attitude levels regarding cytotoxic drugs. A self-administered questionnaire and performance checklist were used. The first and second assessments took 2 months respectively with a 9-month intervention period. The study result shows that the pharmacist-based interventions improved the knowledge, attitude and safe practices of nurses in cytotoxic drug handling (7.6 ±5.51 to 15.3±2.55). It concludes that further assessment may help to confirm the sustainability of the improvement in practices.

Karima Elshamy et al., (2010) carried out an analytical cross sectional study at Mansoura University hospitals, Egypt to identify potential risk factors that may predispose nurses to chemotherapy hazards; and evaluate available protective measures used in clinical practice. A study group of 35 oncology nurses and a control group of 29 non-oncology nurses were compared for safe behaviour, use of protective measures while dealing with drugs, complaints due to drug exposure and mutagens in urine. Three tools were used in the study: a self administered questionnaire, a performance checklist to assess the practice of nurses, and Ames test for the detection of mutagens in urine. Health hazards among the study group and controls were: abortions (31.4% vs 10.3%), infertility and sub-fertility (14.3%

vs 3.4%), premature labour (14.3% vs 17.2%), soft tissue injuries due to spills and splashes (14.3% vs 0.0%). Urine samples from study nurses were more mutagenic than controls (40% vs 10.3%). The study concludes that by developing protocols for nurses helps them to follow the guidelines and wear protective equipment's from exposure to cytotoxic drugs.

Sunita, Kaur et al., (2009) conducted an study regarding side effects of chemotherapy among Nurses during preparation and administration of cytotoxic drugs at higher risk. An observational assessment was carried out in the chemotherapy administration areas at a tertiary care hospital. A direct non participatory observation was carried out for one month to assess the subjects. All the nursing personnel (22) who were posted in the chemotherapy administration areas participated in the study. During one month observation, 77.3% of the nurses experienced small spills (<5ml or 5 grams). The common site of the spillage for more than half (52.9%) of the subjects was surface of preparation of the drug and 47% experienced spillage over both the surface of preparation and the gloves worn by them. Results suggest that drug spills are common in chemotherapy administration areas.

IV. Literature related to safety measures while handling chemotherapy drugs

Magda M Mohsen et al., (2013) was conducted a quasi experimental study at oncology department of Menoufia university hospital and Tanta oncology treatment centre. A convenience sample of forty five nurses in Tanta oncology treatment centre and eighteen nurses in Menoufiya oncology department were selected. Using an interviewing questionnaire, Observational check list baseline data were obtained then Chemotherapy Safety protocol was implemented, and after 2 months they were

assessed again. Results revealed that 88.9% of study group I and 55.6% of study group II improved to good total knowledge scores after educating on the safety protocol, also 95.6% of study group I and 88.9% of study group II had good total practice score after educating on the safety protocol. Moreover less than half of group I (44.4%) reported that heavy workload is the most barriers for them, while the majority of group II (94.4%) had many barriers for adhering to the safety protocol such as they didn't know the protocol, the heavy work load and inadequate equipment. Safety protocol for Oncology Nurses seemed to have positive effect on improving nurses' knowledge and practice.

Rizalar (2012) conducted a study in Turkey to determine the safety measures on personal and environmental protection taken by nurses during chemotherapy preparation and administration. 73 nurses were included in the study group. Data were obtained via questionnaire. The finding showed that nurses are not withstanding the rules and regulations pertaining to chemotherapeutics. The result clearly pointed out the importance of need for regular education programme and this study also revealed the necessity for improvement of the working environment.

CONCLUSION

The above mentioned studies and facts helped the investigator to develop an insight on various areas like Knowledge and Attitude on Chemotherapy, hazards of chemotherapy drugs, safety measures while handling chemotherapy drugs. The literature review helped the researcher in designing the study, developing the tools, gathering and analyzing the data.

CONCEPTUAL FRAME WORK

The conceptual frame work of the study is based on the J.W Kenny's open system model.

All living system is opened in that there is continuous exchange of matters, energy and information. Open system varies in degree of intention with and event the system receives input and gives back output in the form of matters, energy and information. The main concepts of the system theory are input, through put, output and feedback.

Input

Input refers to resources are taken or received from the external environment.

In this study, input refers to assessment of the knowledge, attitude and practical review of nurses on safety measures while handling chemotherapy drugs and video assisted teaching on safety measures while handling chemotherapy drugs .

Through Put

Through put refers to the process of conversion of transformation of resources within the system.

In this study, through put refers to changes which were occur within the staff nurses after video assisted teaching on safety measures while handling chemotherapy drugs.

Out Put

Output is the whole of the system expected back in to the environment.

In this study output refers to gain in the level of knowledge, attitude and development of desirable practice towards safety measures while handling chemotherapy drugs by the nurses as measured by the post test.

Feedback

It refers to a continuing source of information conceiving the relationship with the external environment was used to make necessary changes in order to survive and grow.

In this study, it refers to how much improvement received after video assisted teaching of safety measures while handling chemotherapy drugs among nurses.

This method J.W. Kenny's open system is suited to this study to determine the effectiveness of video assisted teaching on knowledge, attitude and practical review of safety measures while handling chemotherapy drugs among nurses working in oncology unit.

The conceptual frame work based on J.W. Kenny's open system model is presented in figure 1.

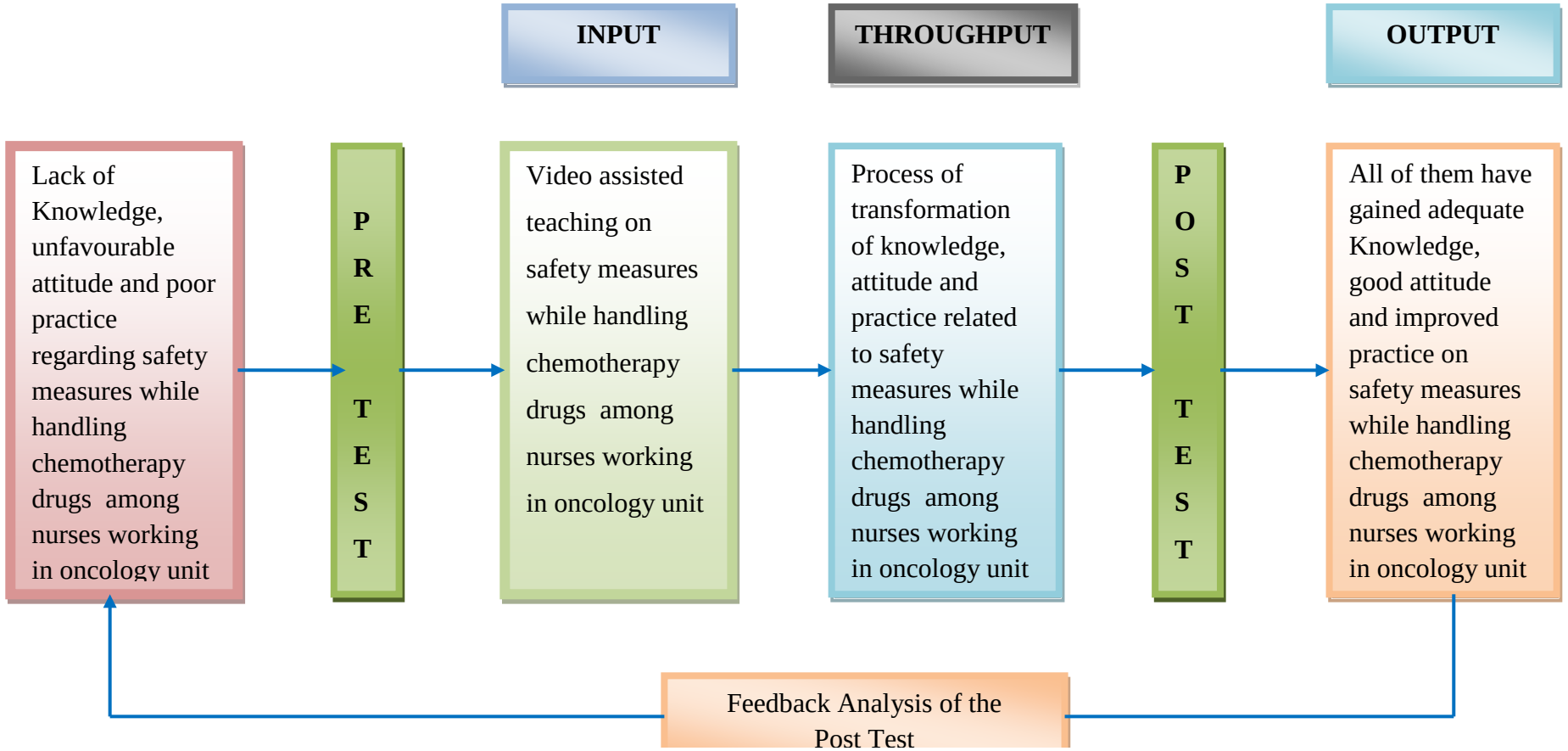


Fig1: THE CONCEPTUAL FRAME WORK BASED ON J.W. KENNY'S OPEN SYSTEM MODEL (2002)

CHAPTER III

METHODOLOGY

Research methodology is a systemic way to solve a problem. It is a science of studying how research is to be carried out. Essentially the procedures by which researchers go about their work of describing, explaining and predicting phenomena are called research methodology. It is also defined as the study of methods by which knowledge is gained. The aim is to give the work plan of research **(Philominathan 2014**).

This chapter dealt with the research approach, research design, setting, population, sample, sampling technique, criteria for sample selection, variables, data collection tools and techniques, content validity of the tool, reliability of the tool, pilot study, procedure for data collection, plan for data analysis and ethical considerations.

RESEARCH APPROACH

Quantitative approach is a method in which the study variables are preselected and defined by the investigator and the data are collected and quantified, then statistically analyzed, after view to establishing cause and effect relationship among the variables **(Basavanthappa 2007)**.

The research approach used for this study was quantitative approach because it was very appropriate for this study.

RESEARCH DESIGN

The research design selected for this study was quasi experimental one group pre test and post test design. This design was selected to explain the relationship between knowledge, attitude and skill of the nurses before and after video assisted teaching.

O1 x O2

O1- Pre-test

X - Intervention

O2- Post-test

Pre-test (O1) refers to pre assessment of the staff nurses knowledge, Attitude and practice regarding safe handling of chemotherapy.

Intervention (X) refers to the video assisted teaching on safe handling of chemotherapy for staff nurses about 15 to 20 minutes.

Post-test (O2) refers to re-assessment of the staff nurses knowledge, Attitude, and practice with the same data collection instruments 15 days after video assisted teaching.

SETTING OF THE STUDY

The study was conducted in International Cancer Centre, Neyyoor. It is an another wing of C.S.I Kanyakumari medical mission hospital, Neyyoor. It was started in the year of 1838. It consisted of 450 beds, in which 100 beds were exclusive for cancer patients. Due to the wide spread prevalence of oral cancers, a

cancer prevention scheme was started in 1961. The international cancer centre was started in 1963 by Dr. Jenkins and a cobalt unit was set up in 1965. C.S.I Kanyakumari Medical Mission hospital has the distinction of being the first hospital to introduce radiation for cancer treatment in South India. In 1985, A new unit thearatron 80 was installed. Today, this centre caters to the needs of all patients from all part of Tamil Nadu with a well equipped dual energy Linear Accelerator for giving modern and full fledged treatment to cancer patients. Patients with various age group and types of cancer admitted for treatment. It is situated within the campus of Christian College of Nursing, Neyyoor.

POPULATION

The population of the study was all staff nurses working at international cancer centre in the C.S.I Kanyakumari Medical Mission Hospital, Neyyoor.

SAMPLE

The sample consisted 30 staff nurses who were working in the international cancer centre.

SAMPLING TECHNIQUE

Sampling is a process of selecting a portion of the population to represent the entire population.

In this study convenience sampling technique was adopted to select the samples by the investigator.

CRITERIA FOR SAMPLE SELECTION

Samples were selected based on following criteria.

Inclusion criteria

- Staff nurses who were working in international cancer centre in the C.S.I Kanyakumari Medical Mission Hospital, Neyyoor.
- Staff nurses working at international cancer centre and available at the time of data collection.
- Staff nurses who were willing to participate in the study.

Exclusion criteria:

- Staff nurses who were sick or ill.

VARIABLES

Independent Variables

It is antecedent and presumed caused to an observed phenomenon (**Mustafa, 2012)**.

In this study independent variable was video assisted teaching on safety measures while handling of chemotherapy drugs.

Dependent variables

It is antecedent and presumed caused to an phenomenon **(Mustafa, 2012).**

In this study dependent variables were knowledge, attitude and practice of nurses regarding safety measures while handling of chemotherapy drugs.

DATA COLLECTION METHOD

1. Prior to data collection formal permission was obtained from the medical superintendent of the hospital.

2. The investigator was introduced herself to the participants.

3. The objectives of the study were explained.

4. Informed consent was obtained from the participants.

5. Pre-test was conducted by administering the structured knowledge questionnaire and likert attitude scale along with practical observation of safe handling of chemotherapy drugs were done using observational checklist.

6. Intervention in the form of video assisted teaching on safety measures while handling of chemotherapy drugs.

7. Post test was conducted by administering the same structured knowledge questionnaire and likert Attitude scale after 15 days following the video assisted teaching, along with practical observation of safe handling of chemotherapy drugs were done using observational checklist.

DATA COLLECTION TOOL AND TECHNIQUE

Tool development is a complex and time consuming process. It consist of defining the construct to be measured, formulating the items, assessing the items for content validity, estimating the reliability and conducting the pilot study (Polit 2012).

Data collection instrument

The instrument consisted four parts:

Part 1

It consisted of demographic variables such as age, gender, marital status, maternal history, professional qualification, years of experience in oncology unit.

Part 2

Structured knowledge questionnaire which was consisted of 20 multiple choice questions about safety measures while handling chemotherapy drugs, it has four options among which one was the correct response, for each correct response one mark was given and for incorrect responses no marks was given.

Part 3

Four point likert scale which was consisted of 10 statements to assess the attitude of the staff nurses regarding safety measures while handling chemotherapy drugs.

Part 4

Checklist which was consisted of 20 statements with responses to assess the practice of the staff nurses regarding safety measures while handling chemotherapy drugs.

Content validity

Validity is the degree to which an instrument measures which is intended to measure (Polit 2012).

Validity of the tool was established on the basis of opinion of experts .The tool was given to experts in the field of Oncology, Medical surgical nursing and medicine for obtaining content validity. No major comments and suggestions were given by the experts and other suggestions were considered and corrections made after discussion with research guide.

Reliability

Reliability is the degree of consisting or dependability with which an instrument measures the attribute it is designed to measure (Polit 2008).

In this study Reliability of safety measures while handling chemotherapy drugs was established by test – retest method. According to Karl Pearson co-efficient method the reliability of the tool was analysed.

PILOT STUDY

A pilot study is a small scale version or trial run designed to test the methods to be used in a larger, more rigorous study which is sometimes referred to us the parent study (Polit 2008).

In order to test the feasibility relevance and practicability of the study, pilot study was conducted in Kanyakumari medical mission Hospital, Neyyoor among nurses who were having previous working experience at oncological department. The pilot study revealed that the study was feasible. No further changes were made in tool after pilot study. Data was analyzed to find out suitability of statistics and the video assisted teaching was effective in improving the knowledge, attitude and practice on safety measures while handling chemotherapy drugs.

DATA COLLECTION PROCEDURE

A written permission was obtained from the Medical Superintendent. The data was collected in 3 steps**.**

Step: 1

After developing initial rapport with the subjects the investigator explained the purpose of the study and obtained written consent. The investigator gradually administered questionnaires.

The investigator administered the structured Attitude questionnaire and structured knowledge questionnaire and practice observed about safety measures regarding handling of chemotherapy drugs on day 1 that was considered as a pre test.

Step: 2

Video assisted teaching on safety measures while handling of chemotherapy drugs was shown to the nurses after the pre test. It was went on around 20 – 30 minutes.

Step: 3

Post test was administered with the same structured questionnaire and practice observed after 15 days of video assisted teaching on safety measures while handling of chemotherapy drugs to the sample subjects.

PLAN FOR DATA ANALYSIS

Descriptive and Inferential statistics was used for analyse the data

1. Frequency, mean, standard deviation to analyse the knowledge and attitude scores.
2. Paired‘t’ test to find the significance of knowledge and attitude gained by staff nurses regarding safety measures while handling of chemotherapy drugs.
3. Chi square test to find the association between pre test and post test knowledge and attitude scores regarding safety measures while handling of chemotherapy drugs with their selected demographic variables.

ETHICAL CONSIDERATIONS

Pilot study & data collection was done after the approval of the dissertation committee. Written consent was obtained from the medical superintendent at the hospital. Participants consent was obtained when filling the questionnaire.

PROTECTION OF HUMAN RIGHTS

Informed consent was obtained from each study subject before starting data collection. Each of the subject was informed that they were free to withhold from the study at any time. The subject also was informed that any clarification regarding safety measures while handling chemotherapy drugs done at any time during the course of the study.

CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

This chapter dealt with the analysis and interpretation of the data which was collected from 30 samples to assess the effectiveness of video assisted teaching on safety measures while handling chemotherapy drugs on knowledge, attitude and practice of nurses in selected hospital at Kanyakumari District.

Statistical analysis is a method of rendering quantitative information messing full and intelligible statistical procedure enables the researcher to reduce, summarize, organize, evaluate, interpret and communicate numeric information (Pilot 2008)

Statistical analysis and interpretations

The study subjects namely nurses were described in terms of percentages in respect of their demographic profiles. Their knowledge, attitude and practice in pre to post test improvements were analyzed and interpreted by student paired "t" tests. The association between demographic profile with knowledge, attitude and practice were associated by χ^2 (Chi-square) test. The P- values less than or equal to 0.05 ($P \leq 0.05$) were considered as statistically significant. The data collected from the subjects were tabulated, analysed presented in the tables and interpreted based on the objectives of the study.

OBJECTIVES OF THE STUDY WERE

- To assess the level of knowledge, attitude and practice of nurses on safety measures while handling chemotherapy drugs before and after video assisted teaching.

- To compare the level of knowledge, attitude and practice of nurses on safety measures while handling chemotherapy drugs before and after video assisted teaching.
- To associate the level of knowledge, attitude and practice of nurses on safety measures while handling chemotherapy drugs with selected demographic variables such as age, gender, marital status, professional qualification, duration of work with chemotherapy drugs.

PRESENTATION OF DATA

The analysis of data were organized and presented under the following headings.

Section – I

Data on description of the study subjects according to their demographic variables.

Section – II

Assessment of knowledge, attitude and practice of nurses on safety measures while handling chemotherapy drugs before and after video assisted teaching.

Section – III

Effectiveness of video assisted teaching on improvement of knowledge, attitude and practice.

Section – IV

Association between demographic profile of nurses with knowledge, attitude and practice.

SECTION – I

Data on description of the study subjects according to their demographic variables.

TABLE – 1

FREQUENCY AND PERCENTAGE DISTRIBUTION OF ONCOLOGICAL NURSES ACCORDING TO THEIR DEMOGRAPHIC VARIABLES

N=30

Sl.No	Demographic Variables	Frequency	Percentage
1	**Age in years**		
	20 - 29 years	23	76.7
	30 -39 years	6	20.0
	40 years and above	1	3.3
2	**Gender**		
	Male	0	0
	Female	30	100.0
3	**Qualification**		
	GNM	30	100.0
	B.Sc Nursing	0	0
4	**Designation**		
	Staff Nurse	28	93.4
	Ward Sister	1	3.3
	Head Nurse	1	3.3
5	**Marital Status**		
	Married	9	30.0
	Unmarried	21	70.0
	Widow	0	0

(Table cont…)

(Table cont…)

Sl.No	Demographic Variables	Frequency	Percentage
6	**Experience in Oncology unit**		
	Less than 1 year	14	46.7
	1 – 2 years	11	36.7
	3 – 4 years	5	16.6
	5 years and above	0	0

The above table-1 reveals that the demographic profiles of the nurses. Among them considering age in years, the majority of the subjects 76.7.% were in the age group of 20-29years, 20% were in the age group of 30 -39 years, 3.3 % were in the age group of 40 years and above .

Regarding sex, that the all of the subjects (100%) were female only.

Regarding qualification, that the all of the subjects (100%) were GNM and none of them having other category.

Regarding designation, that the majority of the subjects 93.4% were Staff nurse, 3.3% were ward sisters, 3.3 % were Head Nurses.

Regarding marital status, that the majority of the subjects 70% were unmarried and 30 % were married.

Regarding experience, that the majority of the sample subjects 46.7% were had less than 1year experience. 36.7% were had 1-2 years of experience, 16.6% were 3-4 years of experience and none of them had more than 5 years of experience.

SECTION – II

Assessment of knowledge, attitude and practice of nurses on safety measures while handling chemotherapy drugs before and after video assisted teaching.

TABLE-2: ASSESSMENT OF NURSES' KNOWLEDGE IN PRE AND POST TESTS

N=30

Category of Knowledge		Pre test		Post test	
		Frequencies	%	Frequencies	%
Good	15-20	0	0.0	26	86.7
Adequate	10-14	17	56.7	4	13.3
Poor	<10	13	43.3	0	0.0
Total		30	100.0	30	100.0

Table 2 showed that, in the pretest majority of the subjects, that was 17 (56.7%) had adequate level of knowledge, 13 (43.3%) had poor level of knowledge and no one had good level of knowledge.

In the post test majority of the subjects, that was 26 (86.7%) had good level of knowledge, 4 (13.3%) had adequate level of knowledge and no one had poor level of knowledge.

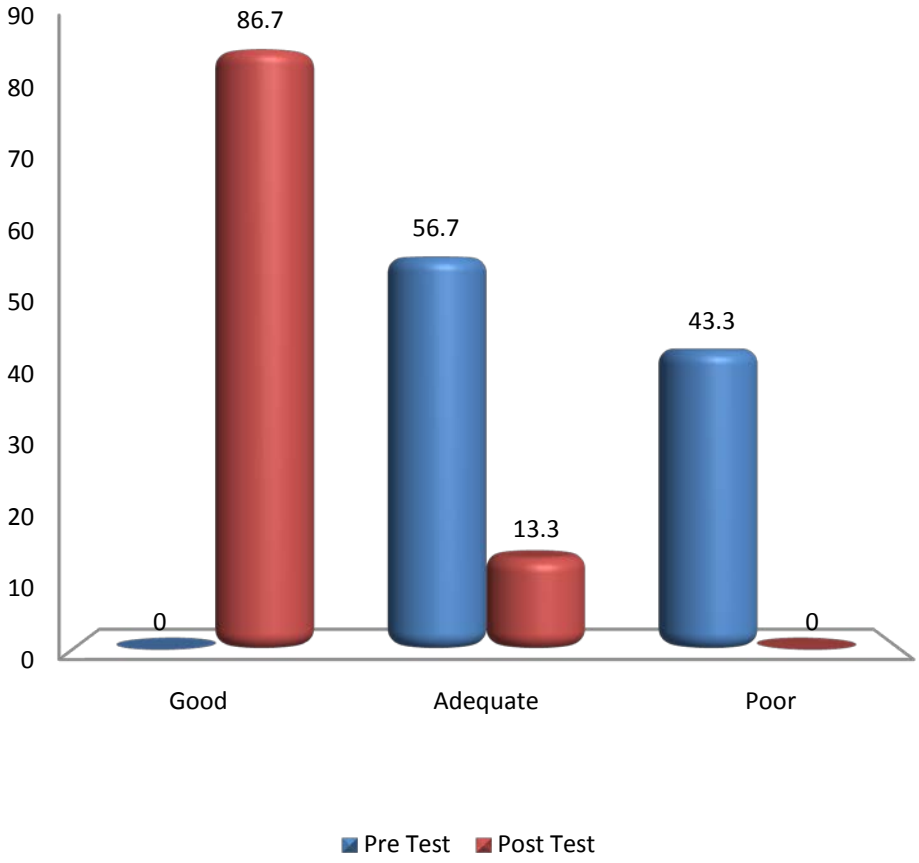


Fig.2 Assess the pre-test and post test level of knowledge of nurses on safety measures while handling chemotherapy drugs before and after video assisted teaching.

TABLE-3: ASSESSMENT OF NURSES' ATTITUDE IN PRE AND POST TEST

N=30

Category of attitude	Score	Pre test		Post test	
		Frequencies	%	Frequencies	%
Good	30-40	3	10.0	30	100.0
Favourable	20-29	27	90.0	0	0.0
unfavourable	<20	0	0.0	0	0.0
Total		30	100.0	30	100.0

Table 3 showed that, In the pretest majority of the subjects, that was 27 (90.0%) had favourable attitude, 3 (10.0%) had Good level of attitude and no one had unfavourable attitude.

In the post test all of the subjects, that was 30(100.0%) had good attitude, and none of them had favourable or unfavourable attitude.

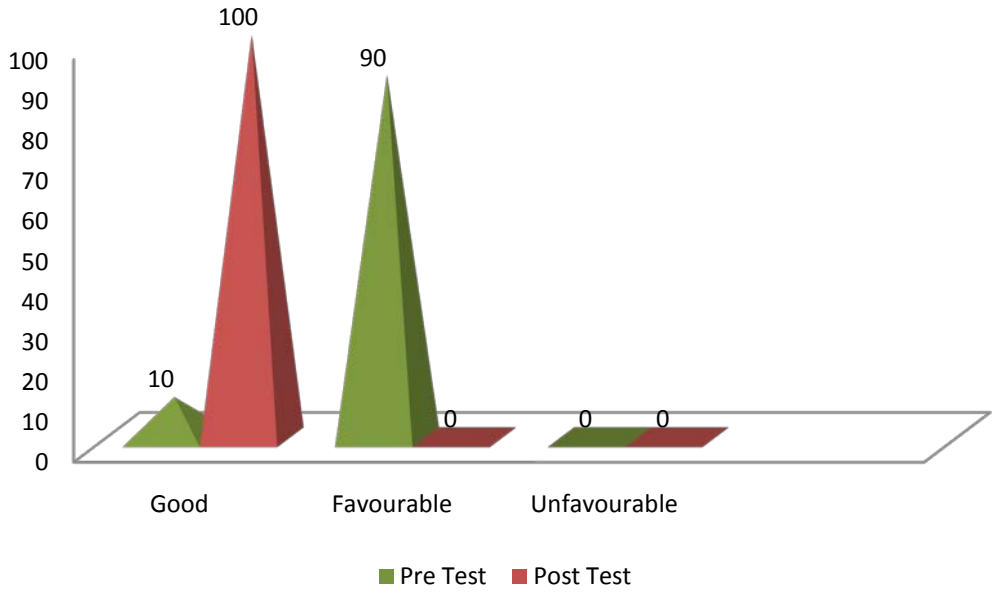


Fig.3 Assess the pre-test and post test level of attitude of nurses on safety measures while handling chemotherapy drugs before and after video assisted teaching.

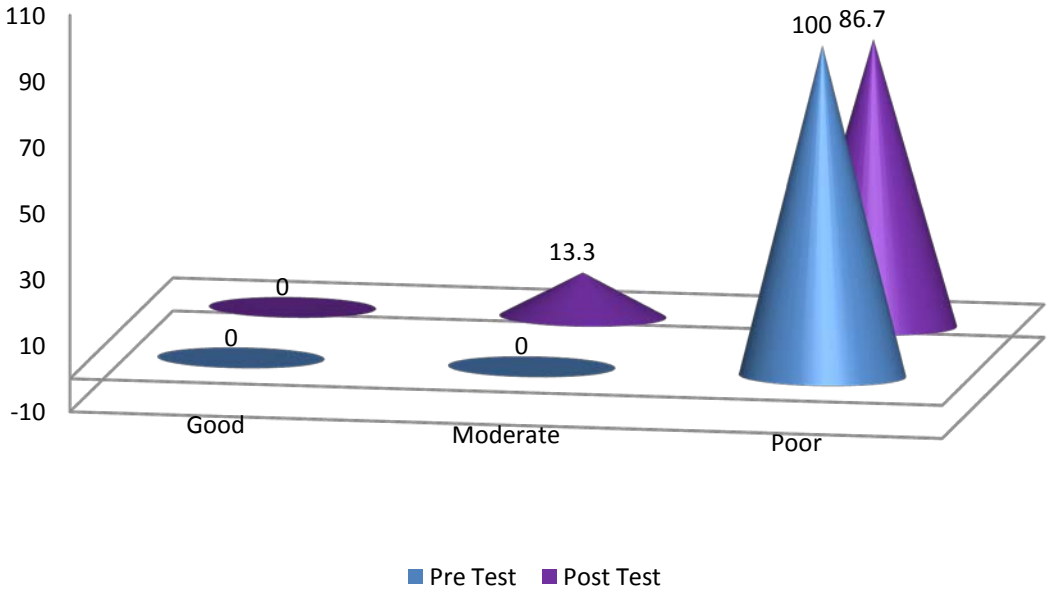
TABLE-4: ASSESSMENT OF NURSES' PRACTICE IN PRE AND POST TEST

N=30

Category of Practice	Score	Pre test		Post test	
		Frequencies	%	Frequencies	%
Good	15-20	0	0.0	0	0.0
Moderate	10-14	0	0.0	4	13.3
Poor	<10	30	100.0	26	86.7
Total		30	100.0	30	100.0

Table 4 showed that, in the pretest, majority of the subjects were 30 (100.0%) had poor level of practice, and no one had moderate and good level of practice.

In the post , test majority of the subjects, that was 26(86.7%) had poor level of practice ,4(13.3%) had moderate level of practice and none of them had good level of practice.



`Fig.4 Assess the pre-test and post test level of practice of nurses on safety measures while handling chemotherapy drugs before and after video assisted teaching.

SECTION – III

The effectiveness of video assisted teaching in the improvement of knowledge, attitude and practice was analyzed and interpreted in pre and post tests.

TABLE-5: EFFECTIVENESS OF VIDEO ASSISTED TEACHING ON KNOWLEDGE, ATTITUDE AND PRACTICE REGARDING SAFETY MEASURES WHILE HANDLING CHEMOTHERAPY DRUGS WITH MEAN AND STANDARD DEVIATION

N=30

Variables	Pre test		Post test		Improvements		"t"	df	Sig
	Mean	SD	Mean	SD	Mean	SD			
Knowledge	9.7	1.9	17.4	2.0	7.7	1.4	29.033	29	P<0.001
Attitude	27.1	2.5	35.7	1.7	8.6	3.2	14.929	29	P<0.001
Practice	3.9	0.6	7.9	1.2	4.0	1.3	16.664	29	P<0.001

The effectiveness of video assisted teaching in respect of knowledge attitude and practice in pre and post test were show in the above table 5. The mean knowledge before video assisted teaching was 9.7±1.9 and the same after video assisted teaching was 17.4±2.0. The mean improvement was 7.7±1.4. Similarly, the mean attitude before and after before video assisted teaching were 27.1±2.5 and 35.7±1.7. The improvement of attitude was 8.6±3.2. Similarly, the mean practices before and after video assisted teaching were 3.9±0.6 and 7.9±1.2. The practice improvement was 4.0±1.3. The mean improvements of knowledge, attitude and practice were statistically very highly significant (P<0.001).

SECTION – IV

Association between demographic profile of nurses with knowledge, attitude and practice.

TABLE – 6: ASSOCIATION BETWEEN PRE TEST LEVEL OF KNOWLEDGE REGARDING SAFETY MEASURES WHILE HANDLING CHEMOTHERAPY DRUGS WITH SELECTED DEMOGRAPHIC VARIABLES

N=30

Sl.No	variables	Knowledge				χ^2	df	Sig
		Good	Adequate	Poor	Total			
1	**Age in years**							
	20 -29	0	13	10	23			
	30 -39	0	3	3	6	0.000	1	P =1.000
	40 & above	0	1	0	1			
2	**Designation**							
	Staff Nurse	0	17	11	28			
	Ward Sister	0	0	1	1	0.875	1	P =0.179
	Head Nurse	0	0	1	1			
3	**Marital status**							
	Married	0	5	4	9			
	Unmarried	0	12	9	21	0.002	1	P =1.000
	Widow	0	0	0	0			
4	**Experience**							
	Lessthan1 year	0	8	6	14			
	1-2 year	0	6	5	11	0.002	1	P =0.961
	3-4 year	0	3	2	5			
	5years &above	0	0	0	0			

Data on table 6 showed that the association of pretest level of knowledge regarding safety measures while handling chemotherapy drugs with selected demographic variables and chi – square test was computed. The findings revealed that there was no significant association between knowledge with age (χ^2 =0.000,df=1,p=1.000), designation(χ^2 =0.875,df=1,p=0.179), marital status (χ^2 =0.002,df=1,p=1.000), and experience (χ^2 =0.002,df=1,p=0.961).

TABLE – 7: ASSOCIATION BETWEEN PRE TEST LEVEL OF ATTITUDE REGARDING SAFETY MEASURES WHILE HANDLING CHEMOTHERAPY DRUGS WITH SELECTED DEMOGRAPHIC VARIABLES

N=30

Sl. No	variables	Attitude				χ^2	df	Sig
		Good	Favourable	Unfavourable	Total			
1	**Age in years**							
	20 -29	11	12	0	23			
	30 -39	5	1	0	6	0.440	1	P =0.507
	40 & above	0	1	0	1			
2	**Designation**							
	Staff Nurse	15	13	0	28			
	Ward Sister	0	1	0	1	0.000	1	P = 1.000
	Head Nurse	0	1	0	1			
3	**Marital status**							
	Married	6	3	0	9			
	Unmarried	10	11	0	21	0.313	1	P =0.576
	Widow	0	0	0	0			
4	**Experience**							
	Lessthan1 year	7	7	0	14			
	1-2 year	7	4	0	11			
	3-4 year	3	2	0	5	0.117	1	P =0.732
	5years &above	0	0	0	0			

Data on table 7 showed that the association of pretest level of attitude regarding safety measures while handling chemotherapy drugs with selected demographic variables, chi – square test was computed. The findings revealed that there was no significant association between attitude with age (χ^2=0.440,df=1,p=0.507), designation(χ^2=0.000,df=1,p=1.000), marital status (χ^2 =0.313,df=1,p=0.576), and experience (χ^2 =0.117,df=1,p=0.732) .

TABLE – 8: ASSOCIATION BETWEEN PRE TEST LEVEL OF PRACTICE REGARDING SAFETY MEASURES WHILE HANDLING CHEMOTHERAPY DRUGS WITH SELECTED DEMOGRAPHIC VARIABLES

N=30

S. No	variables	Practice				χ^2	df	Sig
		Good	Moderate	Poor	Total			
1	**Age in years**							
	20 -29	0	4	19	23			
	30 -39	0	1	5	6	0.128	1	P =0.729
	40 & above	0	1	0	1			
2	**Designation**							
	Staff Nurse	0	6	22	28			
	Ward Sister	0	0	1	1	0.000	1	P =1.000
	Head Nurse	0	0	1	1			
3	**Marital status**							
	Married	0	1	8	9			
	Unmarried	0	7	14	21	0.657	1	P =0.517
	Widow	0	0	0	0			
4	**Experience**							
	Lessthan1 year	0	3	11	14			
	1-2 year	0	3	8	11	0.037	1	P =0.847
	3-4 year	0	2	3	5			
	5years &above	0	0	0	0			

Data on table 8 showed that the association of pretest level of practice regarding safety measures while handling chemotherapy drugs with selected demographic variables and chi – square test was computed. The findings revealed that there was no significant association between practice with age (χ^2=0.128,df=1,p=0.729),designation(χ^2 =0.000,df=1,p=1.000), marital status (χ^2 =0.657,df=1,p=0.517), and experience (χ^2 =0.037,df=1,p=0.847).

CHAPTER - V

RESULTS AND DISCUSSION

The present study was undertaken to assess the effectiveness of video assisted teaching on safety measures while handling chemotherapy drugs on knowledge, attitude and practice of nurses in selected hospital at Kanyakumari District. The study was conducted in International Cancer Centre at C.S.I Kanyakumari medical mission hospital, Neyyoor. Totally 30 samples are selected for the study. The knowledge was assessed by using a structured questionnaire, attitude was assessed by Likert four point attitude scale and practice was assessed using observational check list. The data gathered were analyzed by using descriptive and inferential statistics based on hypotheses.

OBJECTIVES OF THE STUDY WERE

- To assess the level of knowledge, attitude and practice of nurses on safety measures while handling chemotherapy drugs before and after video assisted teaching.
- To compare the level of knowledge, attitude and practice of nurses on safety measures while handling chemotherapy drugs before and after video assisted teaching.
- To associate the level of knowledge, attitude and practice of nurses on safety measures while handling chemotherapy drugs with selected demographic variables such as age, gender, marital status, professional qualification, duration of work with chemotherapy drugs.

Demographic Variables on safety measures while handling chemotherapy drugs on knowledge, attitude and practice of nurses.

Considering age in years, the majority of the subjects 76.7% were in the age group of 20-29years, 20% were in the age group of 30 -39 years, 3.3 % were in the age group of 40 years and above .

Regarding sex, that the all of the subjects (100%) were female only.

Regarding qualification, that the all of the subjects (100%) were GNM and none of them having other category.

Regarding designation, that the majority of the subjects 93.4% were Staff nurse, 3.3% were ward sisters, 3.3 % were Head Nurses.

Regarding marital status, that the majority of the subjects 70% were unmarried and 30 % were married.

Regarding experience, that the majority of the subjects 46.7% were had less than 1year experience. 36.7 were had 1-2 years of experience, 16.6% were 3-4 years of experience and none of them had more than 5 years of experience.

The findings are presented below based on objectives

The first objective of the study was to assess the level of knowledge, attitude and practice of nurses on safety measures while handling chemotherapy drugs before and after video assisted teaching.

In the pretest majority of the subject that is 17 (56.7%) had adequate level of knowledge, 13 (43.3%) had poor level of knowledge and no one had good level of knowledge. In the post test majority of the subject, that is 26 (86.7%) had good level of knowledge,4 (13.3%) had adequate level of knowledge and no one had poor level of knowledge.

In the pre test majority of the subject, that is 27 (90.0%) had favourable attitude,3 (10.0%) had good level of attitude and no one had unfavourable attitude. In the post test majority of the subjects, that is 30 (100.0%) had good attitude and no one had favourable or unfavourable attitude.

In the pre test, majority of the subject is 30 (100.0%) had poor level of practice, and no one had moderate and good level of practice. In the post-test majority of the subjects, that is 26(86.7%) had poor level of practice, 4 (13.3%) had moderate level of practice and none of them had good level of practice.

The present study was supported by the following study. Karpagam k (2017) conducted a study to assess the effectiveness of planned teaching programme on safe handling of chemotherapy drugs among staff nurses in oncology ward. The results shows there is a difference in the level of knowledge before and after administration of planned teaching programme, it was statistically significant at ($p<0.001$). The study concludes that planned teaching programme effective in improving the nurses knowledge in administering chemotherapy drugs.

So the first objective focus on the difference between the pretest knowledge, attitude and practical review of safety measures while before and after video assisted teaching while handling chemotherapy drugs are significant. It is accepted.

The second objective of the study was to compare the level of knowledge, attitude and practice of nurses on safety measures while handling chemotherapy drugs before and after video assisted teaching.

The pre test mean knowledge score was 9.7 with standard deviation 1.9 and the knowledge percentage score was 48.5%. The post test mean knowledge score was 17.4 with standard deviation 2.0 and the knowledge percentage score was 87%.

The pre test mean attitude score was 27.1 with standard deviation 2.5 and the attitude percentage score was 67.75%. The post test mean attitude score was 35.7 with standard deviation 3.2 and the attitude percentage score was 89.25%.

The pre test mean practice score was 3.9 with standard deviation 0.6 and the practice percentage score was 19.5%. The post test mean practice score was 7.9with standard deviation 1.2 and the practice percentage score was 39.5%.

The pretest mean knowledge score was 9.7±1.9 and the post test score was 17.4±2.0 the mean difference was high and statistically significant. That is the video assisted teaching improves the knowledge of nurses regarding safety measures while handling of chemotherapy ($P<0.001$).

The pretest mean attitude score was 27.1±2.5 and the post test score was 35.7±1.7 the mean difference was high and statistically significant. That is the video assisted teaching improves the attitude of nurses regarding safety measures while handling of chemotherapy ($P<0.001$).

The pretest mean practice score was 3.9±0.6 and the post test score was 7.9±1.2 the mean difference was high and statistically significant. That is the video assisted teaching improves the practice of nurses regarding safety measures while handling of chemotherapy ($P<0.001$).

The present study was supported by the following study, Chan Huan Keat, etal. (2013) conducted a study for assessing the change of nurses' safety-related knowledge as well as attitude levels regarding cytotoxic drugs. The study result shows that the pharmacist-based interventions improved the knowledge, attitude and safe practices of nurses in cytotoxic drug handling (7.6 ±5.51 to 15.3±2.55). It concludes that further assessment may help to confirm the sustainability of the improvement in practices.

So the first hypothesis focus on the difference between the pretest and post test practical review of safety measures while handling of chemotherapy among nurses before and after video assisted teaching are significant. So the first hypothesis is accepted.

The third objective of the study was to associate the level of knowledge, attitude and practice of nurses on safety measures while handling chemotherapy drugs with selected demographic variables such as age, gender, marital status, professional qualification, duration of work with chemotherapy drugs.

There is no association between the level of knowledge of nurses on safety measures while handling chemotherapy drugs and their selected demographic variables like such as age, gender, marital status, professional qualification, duration of work with chemotherapy drugs**.**

There is no association between the level of attitude of nurses on safety measures while handling chemotherapy drugs and their selected demographic variables like such as age, gender, marital status, professional qualification, duration of work with chemotherapy drugs**.**

There is no association between the level of practice of nurses on safety measures while handling chemotherapy drugs and their selected demographic variables like such as age, gender, marital status, professional qualification, duration of work with chemotherapy drugs**.**

So the second hypothesis is rejected between demographic variables and knowledge, attitude and practice level of practice of nurses on safety measures while handling chemotherapy drugs.

CHAPTER-VI

SUMMARY, CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS

This chapter deals with summary of the study and the conclusion drawn out of the data what is collected for the study. It clarifies the limitation of the study and implications. The recommendations are given for different areas like nursing practice, nursing education, nursing administration and nursing research.

SUMMARY

This study is undertaken to " to assess the effectiveness of video assisted teaching on safety measures while handling chemotherapy drugs on knowledge, attitude and practice of nurses in selected hospital at kanyakumari district.

The following objectives are formulated for the study.

1) To assess the level of knowledge, attitude and practice of nurses on safety measures while handling chemotherapy drugs before and after video assisted teaching.
2) To compare the level of knowledge, attitude and practice of nurses on safety measures while handling chemotherapy drugs before and after video assisted teaching.
3) To associate the level of knowledge, attitude and practice of nurses on safety measures while handling chemotherapy drugs with selected demographic variables such as age, gender, marital status, professional qualification, duration of work with chemotherapy drugs. The following hypotheses were

set for the study. The entire hypotheses were tested at 0.05 level of significance.

H_1: There will be a significant difference between level of knowledge, attitude and practice of nurses regarding safety measures while handling of chemotherapy drugs before and after video assisted teaching.

H_2: There will be a significant association between pre test level of knowledge, attitude and practice of nurses regarding safety measures while handling chemotherapy drugs with selected demographic variables.

The purpose of the study was to assess the knowledge, attitude and practice of nurses on safety measures while handling chemotherapy drugs before and after video assisted teaching. The study was conducted in International Cancer Centre at Kanyakumari medical mission Hospital, Neyyoor. Purposive sampling techniques was adopted. Samples were selected on the basis of inclusion criteria. Samples used were 30 staff nurses who were working at the international cancer centre. The data collection tools developed for generating the data, were a structured knowledge questionnaire to assess the knowledge of nurses regarding safety measures while handling chemotherapy drugs, four point likert attitude scale to assess the attitude of nurses about safety measures while handling chemotherapy drugs and observational checklist to assess the practice of nurses regarding safety measures while handling chemotherapy drugs. The study was based on the J.W Kenny's open system model. The research design adapted for this study was one group pretest post test design. The feasibility of the study and the refinement of tools were assessed through pilot study. The data collection for the main study was done from 22/1/18 to 03/3/18 statistical analysis was done by using both descriptive and inferential statistics.

FINDINGS OF THE STUDY

Characteristics of the participants

Regarding age in years, the majority of the subjects 76.7% were in the age group of 20-29years, 20% were in the age group of 30 -39 years, 3.3 % were in the age group of 40 years and above .

Regarding sex, that the all of the subjects (100%) were female only.

Regarding qualification, that the all of the subjects (100%) were GNM and none of them having other category.

Regarding designation, that the majority of the subjects 93.4% were Staff nurse, 3.3% were ward sisters, 3.3 % were Head Nurses.

Regarding Marital status, that the majority of the subjects 70% were unmarried, 30 % were married.

Regarding experience, that the majority of the subjects 46.7% were had less than 1year experience. 36.7% were had 1-2 years of experience, 16.6% were 3-4 years of experience and none of them had more than 5 years of experience.

SIGNIFICANT FINDINGS OF THE STUDY

Regarding the knowledge score of staff nurses 56.7% have adequate knowledge regarding safety measures while handling of chemotherapy drugs. The mean knowledge score was 9.7±1.9.

Regarding the Attitude score of staff nurses 90.0% have favourable attitude regarding safety measures while handling of chemotherapy drugs. The mean attitude score was 27.1±2.5.

Regarding practice score of staff nurses 100% have poor practice regarding safety measures while handling of chemotherapy drugs. The mean practice score was 3.9±0.6.

There is no association between level of knowledge of nurses on safety measures while handling chemotherapy drugs and their selected demographic variables**.**

There is no association between level of attitude of nurses on safety measures while handling chemotherapy drugs and their selected demographic variables.

There is no association between level of practice of nurses on safety measures while handling chemotherapy drugs and their selected demographic variables**.**

CONCLUSION

This study reveals that the video assisted teaching is effective in improving the knowledge, attitude and practice of nurses on safety measures while handling chemotherapy drugs. Though knowledge and attitude of nurses are significantly improved with highest mean improvement, because of unavailability of adequate resources (bio safety cabinet, N95 respirator) in the oncological unit, practice were improved with low mean improvement. So we strongly recommend to setup the clinical area with adequate resources to maintain safe practices and to avoid harmful effects from chemotherapy drugs.

IMPLICATIONS

The study has several implications for the following fields.

Implication For Nursing Practice

1. The present study will help the nurses to evaluate their knowledge, attitude and practice on safety measures while handling chemotherapy drugs.
2. The study will emphasize in gaining knowledge regarding safety measures while handling chemotherapy drugs by video assisted teaching.
3. Nurses can be provided in service education to update their knowledge, attitude and practice regarding safety measures while handling chemotherapy drugs.

Implications for Nursing Education

1. During the basic period of fundamentals of nursing the nursing students should be taught and explained about the importance of safety measures while handling chemotherapy drugs.
2. The in service education which has been conducted by the investigator help the student nurses, trained nurses to understand the importance of safety measures while handling chemotherapy drugs
3. The study also enlighten the fact that video assisted teaching on safety measures while handling chemotherapy drugs can be used to programme their practice and technique.

Implications for Nursing Administration

1. Nurse administrator should initiate to conduct the periodical in service education programme in order to gain knowledge regarding safety measures

while handling chemotherapy drugs.

2. Nurse administrator should evaluate the practice and techniques on safety measures while handling chemotherapy drugs by conducting regular clinical audit.
3. The nurse administrator should provide pamphlets/posters to each oncology ward.

Implications for Nursing Research

1. This study finding can be utilized for literature review for researchers.
2. The nurse administrator should motivate for doing more research in this aspect.
3. This study can motivate researchers to conduct experimental studies, further regarding safety measures while handling chemotherapy drugs which ultimately the way to many research studies.

RECOMMENDATIONS

Based on the findings of the study the investigator proposed the following recommendations for the further study.

5. The study can be done with large number of samples for better generalization.
6. The same study can be conducted to find out the factors responsible for improper practice on safety measures while handling chemotherapy drugs.
7. The study can be conducted among the nursing students in the clinical field.
8. A similar study can be conducted in other hospital settings & ward settings.

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APPENDIX - I

LETTERS SEEKING PERMISSION TO CONDUCT THE STUDY

CHRISTIAN COLLEGE OF NURSING
C.S.I. KANYAKUMARI DIOCESE
(Affiliated to the Tamil Nadu Dr. M.G.R. Medical University, Chennai)
Approved by Indian Nursing Council, New Delhi and Tamil Nadu Nurses and Midwives Council, Chennai
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47/M.Sc.(N)/2018

Date..... 10.02.2018

To
Prof. Dr. V.G. Sudhakaran, MD.,
HOD Oncology,
Consultant Radiation Oncology,
International Cancer, Neyyoor.

Respected Sir,

Sub: Requisition for getting permission to do Data Collection for a Research project – Reg.

This is to introduce **Achsah Merlight A**, II Year M.Sc. Nursing student of this College. She is to conduct a research project as a partial fulfillment of University requirements for the award of M.Sc. degree in Nursing.

Topic:

"**A study to assess the effectiveness of Video Assisted teaching on Safety Measures while handling Chemotherapy drugs on knowledge, Attitude and practice of Nurses in selected hospital at Kanyakumari District.**

This student is in need of your esteemed help and guidance as she is interested in conducting her study in your well esteemed hospital.

This is to request you to kindly extend necessary facilities to her work on her proposed study during the month of Feb. & March 2018.

Thanking you,

Yours Sincerely,

Study Permitted.

Prof. Dr. V.G. SUDHAKARAN, M.D
HOD ONCOLOGY
CONSULTANT RADIATION ONCOLOGY
INTERNATIONAL CANCER CENTRE, NEYYOOR
REG. No. 4843

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SOUTH INDIA

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APPENDIX II

LETTER SEEKING EXPERTS OPINION FOR THE VALIDITY OF THE TOOL

From,

Ms.A .Achsah Merlight

II Year M.sc (N)

Christian College of Nursing , Neyyoor.

To,

Respected Sir/ Madam

Sub: M.sc Nursing programme-Dissertation validation of study tool request-reg.

Ms.A.Achsah Merlight, a bonafide II Year M.sc(N) student of Christian College of Nursing, Neyyoor is approaching you to obtain validation of my study tool pertaining to dissertation in partial fulfilment of the requirements for the degree of Master of Science in Nursing. The selected topic is

"A study to assess the effectiveness of video assisted teaching on safety measures while handling chemotherapy drugs on knowledge, attitude and practice of nurses in selected hospital at Kanyakumari district."

In this regards I humbly request you to kindly extent possible technical guidance and support for successful completion of dissertation.

Thanking You,

Yours Faithfully

I enclosed here with a

1. Research proposal

2. Tool

Section A:

-Demographic data (English)

Section B:

Structured knowledge questionnaire which consists of 20 multiple choice questions about safety measures regarding handling of chemotherapy drugs.

Section C

Four point likert scale consists of 10 statements to assess the attitude of the staff nurses regarding handling of chemotherapy drugs.

Section D

Observational checklist consist of 20 statements with responses to assess the practice of the staff nurses regarding handling of chemotherapy drugs.

CERTIFICATE OF TOOL VALIDATION

This is to certify that the tool constructed byMs.A .AchsahMerlight, II Year M.sc Nursing, Christian College of Nursing, Neyyoor to be used in her study,

"A study to assess the effectiveness of video assisted teaching on safety measures while handling chemotherapy drugs on knowledge, attitude and practice of nurses in selected hospital at kanyakumari district." has been validated by me and can be used for data collection.

My comments on the following tool

Adequacy of tool to measure objectives

Organization of the tool

Feasibility of the tool.

Signature:

Name:

Designation:

College:

APPENDIX – III

LIST OF EXPERTS WHO HAVE DONE VALIDATION OF THE TOOL

1. **Prof. Dr. V. G. Sudhakaran**, M.D.,
   HOD Oncology,
   Consultant Radiation Oncology,
   International Cancer Centre, Neyyoor.

2. **Mrs.N. AdlinShinija, M.Sc (N)**
   Principal,
   Annammal College of Nursing,
   Kuzhithurai.

3. **Mrs.C.AjithaRetna ,M.sc (N)**
   Vice principal,
   Sreemookambika College of Nursing,
   Kulasekhram

4. **Mrs. D. NesalinSuji, M.Sc (N)**
   Lecturer,
   C.S.I. College of Nursing,
   Marthandam.

5. **Mrs. C.R. Merlin Suja, M.Sc (N)**
   Lecturer,
   C.S.I. College of Nursing,
   Marthandam.

6. **Mrs. Y. VinithaBai, M.Sc (N)**
   Lecturer,
   C.S.I. College of Nursing,
   Marthandam.

APPENDIX – IV

CERTIFICATE OF TOOL VALIDATION

Instructions

The expert is requested to go through the following criteria for evaluation. Four columns are given for responses and a column for remarks. Kindly please tick in the appropriate columns and give the remarks.

Items	Very Relevant	Relevant	Need Modification	Not Relevant	Remark

Signature:

Designation:

Remarks:

DATA COLLECTION TOOLS

PART – I

DEMOGRAPHIC DATA

Please answer all questions by ticking (✓) in any one of the boxes which is given on the right hand side of each choice.

1. Age in years

a) 21-30 years [ ]
b) 31- 40 years [ ]
c) Above 40 years [ ]

2. Gender

a) Male [ ]
b) Female [ ]

3. Professional Qualification

a) GNM [ ]
b) B.Sc Nursing [ ]

4. Designation

a) Staff Nurse [ ]
b) Ward Sister [ ]
c) Head Nurse [ ]

5. Marital Status

a) Married [ ]
b) Unmarried [ ]
c) Widow [ ]

6. Years of experience in oncology unit

a) Less than 1 year [ ]
b) 1 – 2 years [ ]
c) 3 – 4 years [ ]

d) 5 and above [ ]

PART- II

KNOWLEDGE QUESTIONNAIRE

Dear respondent ,please read each items and its response and place a tick mark (✓) in the squares against the response which you feel is the most appropriate

1. What is the standard PPE which is used by the nurse while administering chemotherapy ?

a) Helmet, Eye goggles, Gown, Ted stockings [ ]
b) Ted stockings, Ear muffs, Gloves, Mask [ ]
c) Ear muffs, Eye goggles, Gown, Gloves [ ]
d) Gown, Gloves, Mask, Eye goggles [ ]

2. Which is an additional protective equipment use during administration of chemotherapy?

a) Mask, Eye Goggles [ ]
b) Eye covering, Respirator [ ]
c) Mouth covering, Eye goggles [ ]
d) Ted stockings, Mask [ ]

3. In the chemotherapy barrier technique , what type of gown to be selected?

a) Front open gown [ ]
b) Disposable gown [ ]
c) Sleeveless gown [ ]
d) Fabric gown [ ]

4. What type of material used for preparing gown

a) Latex [ ]
b) Fabric [ ]
c) Polythene [ ]
d) Cloth [ ]

5. What type of gown to be avoided while administration of chemotherapy drugs?

a) Disposable gown [ ]
b) Laboratory coats [ ]
c) Fabric gown [ ]
d) Back closure gown [ ]

6. What type of gloves to be selected during administration of chemotherapy drugs?

a) Disposable gloves [ ]
b) Powder with plastic [ ]
c) Labelled and tested [ ]
d) Sterile gloves [ ]

7. The gloves used by the care givers should be made up of which type of material?

a) Latex neoprene [ ]
b) Metals [ ]
c) Plastic with powder [ ]
d) Polythene [ ]

8. What is to be the safety measures to prevent contamination?

a) Using eye covering, Ted stockings, Cap [ ]
b) Using chemotherapy resistant gloves and gowns [ ]
c) Using ear covering, using helmet, mask [ ]
d) Using face mask, Helmet, Ted stockings [ ]

9. What is the immediate care of eye after exposure to hazardous drugs?

a) Isotonic eye wash [ ]
b) Hypertonic eye wash [ ]
c) Hypotonic eye wash [ ]
d) 3% saline eye wash [ ]

10. What is the common route of exposure to hazardous drugs?

a) Close Helmet [ ]
b) Over crowding [ ]
c) Inhalation [ ]
d) Injection [ ]

11. When the standard precautions to be taken while handling chemotherapy?

a) Before drug preparation to disposal [ ]
b) During drug preparation to disposal [ ]
c) During drug transfusion to disposal [ ]
d) Before drug disposal [ ]

12. How long standard precautions to be continued?

a) 24 hours after completion of chemotherapy [ ]
b) 72 hours after completion of chemotherapy [ ]
c) 48 hours after completion of chemotherapy [ ]
d) 1 hour after completion of chemotherapy [ ]

13. What is the common system seen in health care worker after exposure to hazardous drugs?

a) Hematuria [ ]
b) Skin irritation [ ]
c) Diarrhoea [ ]
d) Bleeding [ ]

14. What is the common reproductive outcomes of exposed female health worker to hazardous drugs?

a) Fetal loss [ ]
b) Polycystic ovary [ ]
c) Uterine prolapsed [ ]
d) Pelvic inflammatory disease [ ]

15. Which drug is excreted in the urine of healthcare worker after exposure to chemotherapy?

a) Vincristine [ ]
b) Ifosfamide [ ]
c) Fluorouracil [ ]
d) Cyclophosphamide [ ]

16. How much percentage of cyclophosphamide drug is excrete in the urine of exposed person?

a) 49% [ ]
b) 50% [ ]
c) 25% [ ]
d) 91% [ ]

17. Which test is used to find the chemotherapy exposure in the urine?

a) Ames assay [ ]
b) Benedict's test [ ]
c) Aluminium test [ ]
d) Copper test [ ]

18. Where the chemotherapy drugs to be prepared for administration?

a) Medication area [ ]
b) Biological safety cabinet [ ]
c) Chemotherapy room [ ]
d) Pharmacy [ ]

19. How the polluted air from the cytotoxic drug preparation area is filtered?

a) Air condition [ ]
b) HEPA [ ]
c) Ozone layer [ ]
d) Fumigation [ ]

20. What is the effective chemical used for neutralising all chemotherapy drugs?

a) Sodium hypochloride [ ]

b) Sodium hydrochloride [ ]

c) Dry carbon powder [ ]

d) Formalin [ ]

PART - III

ATTITUDE SCALE

Dear respondent ,please read each items and its response and place a tick mark(✓) *in the squares against the response which you feel is the most appropriate*

Sl.no	Statement	Strongly agree	Agree	Disagree	Strongly disagree
1	PPE makes me from doing my job to the best of my abilities.				
2	Wearing PPE makes patient worry				
3	I don't think PPE is necessary				
4	I don't have time to use PPE				
5	People would think I am overly conscious				
6	I am confident that I can use PPE properly				
7	I am confident that I can protect myself from chemotherapy exposure				
8	I am given enough information on how to protect from chemotherapy exposure.				
9	Re use of disposable PPE makes me feel less protected.				
10	I am provided with the best available PPE				

PART - IV

OBSERVATIONAL CHECKLIST

Sl. No	Nursing Action	Done	Not Done
1	Explains procedure		
2	Performs Hand hygiene		
3	Wears appropriate PPE		
4	Wears lint – free fabric low permeability gown		
5	Wears double gloving and chemotherapy resistant gloves		
6	Wears mask.		
7	Wears eye goggles.		
8	Changes gloves immediately if contaminated.		
9	Prepares chemotherapy agent in the biological safety cabinet area.		
10	Uses caution sticker and administer chemotherapy drugs.		
11	Stores the chemotherapeutic agents in an area labelled.		
12	Transports the chemotherapeutic agents in a zip lock bags.		
13	Places contaminated disposable items in the plastic bag.		
14	Cleanses biosafety cabinet area safely.		
15	Removes PPE safely.		
16	Disposes PPE safely.		
17	Performs Hand hygiene.		
18	Disposable excess chemotherapeutic agent which is used is discarded in chemotherapy waste container.		
19	Uses appropriate container for segregation and disposal of chemotherapy waste.		
20	Follows safety standard for transportation of chemotherapy waste.		

PURPOSE

- To protect the staff from the exposure of chemotherapy drugs.
- To safely administer chemotherapy drugs to patients for cancer treatment.
- To provide a safe environment for the safe working with chemotherapy drugs.

SOURCES OF EXPOSURE

- Inhalation of aerosolized drug particles.
- Absorption through the skin.
- Ingestion through eating or drinking with contaminated hands.
- Injections through accidental needle stick injuries.

SAFE HANDLING OF CHEMOTHERAPY PRINCIPLES

Three basic principles must be considered at all times when handling , transporting or administering chemotherapy drugs.

A) Protection of the patient

B) Protection of employees

C) Protection of the environment

EQUIPMENT

Personel protective equipment (PPE) is required when administering chemotherapy drugs and handling chemotherapy waste.

a) Gowns

- A long sleeve , back closure , water/ drug repellent, disposable protective gown with solid front and tight fitting cuffs (elastic or knit).

b) Gloves

- Disposable powder free non latex gloves designed and validated for chemotherapy administration.(eg. Nitrile gloves)

c) Masks

- Properly fitted N95 masks for respiratory protection must be used.

d) Goggles

- Protective eye wear (i.e.safety glasses with side shields)must be used during cleaning procedures.

CHEMOTHERAPY HAZARDOUS SPILL KIT

Hazardous spill kits containing all materials and equipment necessary to clean a spill,are available and readily accessible at each area where hazardous drugs are handled.

It includes

a) 2 pairs disposable non latex gloves – large size
b) Low permeability gown and shoe covers
c) Safety glasses, splash goggles or face shield.
d) Respirator mask (unless included in face shield)
e) Plastic backed absorbent sheets or spill pads (sufficient to absorb a spill of up to 1000ml)
f) Disposable towels or swabs for absorbing and cleaning liquid spills.
g) At least 2 sealable plastic waste bags “chemotherapy waste”.
h) Disposable scoop for collecting glass fragments.

i) Puncture – resistant container for glass fragments, clearly labelled as cytotoxic waste container.

j) Cleaning solution for cleaning and decontamination of area.

k) Instructions on the management of a cytotoxic chemotherapy spill.

l) Warning signs to alert other staff to the hazard and isolate the area of the spill.

OTHERS

- Chemotherapy drug precaution labels.
- Chemotherapy precautions sign
- Chemotherapy sharps & fluid resistant waste container
- Sign alerting staff to use the chemotherapy sharps & fluid resistant waste container
- Transport waste container
- Medicine cup
- Plastic – backed absorbent liner
- 2x2 gauze pices.

PREPARATION OF THE PATIENT

1. Review the following patient information
    - Applicable lab results
    - Previous lab results
    - Previous treatment for cancer
    - Experienced side effects and interventions
    - Adequacy of past symptom management

- Previous dose adjustments
- Concurrent medical conditions
- Weight changes > 10%
- Willingness to proceed

2. Provide information to the patient and family regards
    - Indication of chemotherapy
    - Method of administration
    - Potential side effects and complications, and the importance of informing nurses of the same.
    - Safe handling of drug and body waste.
3. Ensure that a chemotherapy / Hazardous Drug spill kit is available on the unit.
4. Ensure that the clients room is set up with chemotherapy drug precautions.
5. Affix chemotherapy drug precaution labels on the chart, all tubing's exciting patient, specimens and requisitions for specimens, tests and procedures.
6. Place a chemotherapy sharps & Fluid Resistant Waste Container and / or Chemotherapy Soft – Sided Waste Container in the patient's room.
7. Monitor Vitals before initiation of chemotherapy.
8. Before chemotherapy infusion, check that the spike connection to the bag is secure.

PROCEDURE

1. Perform hand hygiene.
2. Don Personal Protective Equipment required for route of administration.
3. Chemotherapy preparation must be performed in a ducted biosafety cabinet.
4. The area should be a work area that is quiet, uncluttered, and well ventilated.

5. Airflow is drawn around the operator into the front grille of the cabinet ; the downward laminar flow of HEPA – filtered air provides product protection by minimizing the chance of cross – contamination along the work surface of the cabinet.
6. Always work below eye level.
7. Preparations should be performed over plastic backed absorbent pads.
8. External surfaces of syringes should be wiped with a clean alcohol pad to remove any potential contamination.
9. Chemotherapeutic agents must be transported in ziplock bags with chemo labels.
10. Verify blood return immediately prior to initiating chemotherapy.
11. Administer pre – hydration and pre – medication as ordered.
12. Using aseptic techniques connect chemotherapy as prescribed rate in the chemotherapy unit.
13. After administration, discard hazardous drug syringes (with the safety needle attached) directly into a chemotherapy waste container.
14. Excess chemotherapeutic agent and used items must be disposal in chemotherapy waste container.
15. The ducted biosafety cabinet should be cleaned (70%isopropyl alcohol) upon completion of tasks.
16. Wash hands with soap & water after removal of PPE.
17. Report to the physician.

AFTER CARE

1. Record starting and ending time of chemotherapy administration.
2. If spilled clean the patient's skin well and apply a barrier cream/ ointment to the skin in contact with the diaper to decreased skin irritation.
3. Place soiled linen into a plastic laundry bag.
4. The laundry bag needs to be labelled as chemotherapy contaminated.
5. Staff handling that laundry will needs to wear PPE.
6. Items being returned to SPD for cleaning should be handled in the usual manner.

DRUG SPILL

1. Do NOT leave the area of the spill. Have a co – worker bring the chemotherapy / hazardous Drug Spill Kit.
2. Alert persons in immediate area.
3. Put on personal protective equipment (PPE) from the spill kit.
4. Attend to anyone who has been splashed with the drug.
5. Contain the spill from the outer edges to the center by placing absorbent towels over the contaminated area.
6. Wash area three times, first with the detergent (supplied in kit) followed by water.
7. Dry well with absorbent towel.
8. Dispose of linen, supplies and waste.
9. Remove PPE.
10. Wash hands with soap and water.

DRUG EXPOSURE

Splash to eyes

1. Flush eyes immediately at eyewash station for at least 15 minutes. If eyewash station is unavailable, flush with copious amounts of water or normal saline for atleast 15 minutes.
2. Immediately notify the Nurse Manager.
3. Follow – up with the Occupational Health and Safety / Health Office for post exposure blood work (baseline and 2 weeks)

Splash to skin

1. Remove contaminated clothing immediately.
2. Flush area with copious amounts of water for at least five minutes.
3. Follow with soap and water.
4. Launder contaminated clothing at home separately once, then re – wash with regular wash, or arrange for laundry services to launder your uniform for you. If a replacement uniform is not available pickup of a decontamination uniform.
5. Immediately notify the Manager of Nursing.
6. Follow – up with the Occupational Health and Safety / Health Office for post exposure blood work (baseline and 2 weeks)

CONCLUSION

Hazardous drug handling is potentially risky work. Many nurses have the potential to be exposed to hazardous drugs in the workplace. Occupational Safety and Health Administration, and National Institute of Occupational safety Health all

provide guidelines for the safe handling of hazardous drugs. While not providing complete protection, it is believed that adherence to current recommendations will reduce health care workers exposure. By reducing exposure, the negative health effect should be reduced. It is time for nurses to take their own occupational safety as seriously as the safety of the patients under their care.

APPENDIX –VII

ANSWER KEY FOR KNOWLEDGE QUESTIONAIRE

Question Number	Answer	Question Number	Answer
1	d	11	a
2	a	12	c
3	d	13	b
4	b	14	a
5	b	15	d
6	c	16	c
7	a	17	a
8	b	18	b
9	a	19	b
10	c	20	B

SCORING INTERPRETATION KNOWLEDGE QUESTIONAIRE

15-20 : Good knowledge.

10-14 : Adequate knowledge.

0-9 : Poor knowledge

SCORING INTERPRETATION FOR ATTITUDE SCALE

30.40 : Good Attitude

20-29 : Favourable Attitude

Below 29 : Unfavourable Attitude

SCORING INTERPRETATION FOR PRACTICE CHECKLIST

15-20 : Good Practice

10-14 : Moderate Practice

Below 10 : Poor Practice

APPENDIX -VIII

SCORE OBTAINED BY THE RESPONDENT

Sample No	Pre-Knowledge	Post-Knowledge	Pre-Attitude	Post Attitude	Pre Practice	Post Practice
1	8	16	27	36	4	10
2	11	18	22	34	4	9
3	10	17	28	37	3	7
4	7	14	24	34	4	6
5	11	19	29	35	5	10
6	12	19	22	38	4	9
7	10	17	23	37	4	10
8	12	18	26	36	4	9
9	9	16	29	35	3	8
10	7	17	29	32	4	7
11	11	19	27	38	5	6
12	10	20	29	34	5	8
13	7	14	28	37	3	7
14	9	17	28	33	3	8
15	13	20	24	34	4	8
16	9	16	26	37	4	10
17	6	13	32	37	3	8
18	10	20	29	38	4	9
19	7	17	28	36	3	7
20	9	19	27	33	4	9
21	12	17	26	37	4	8
22	11	19	31	36	4	7
23	7	16	27	36	5	6
24	8	17	29	33	3	8
25	11	20	31	37	4	7
26	11	19	29	36	4	7
27	13	19	26	34	3	7
28	10	16	27	37	4	8
29	9	14	24	38	4	7
30	12	19	26	37	4	7

APPENDIX - IX

ETHICAL CLEARANCE CERTIFICATE

Dear:A.AchsahMerlight,

Sub: Your letter dated 05-06-2017 for approval of the above reference study and its related documents.

Ref**: "A study to assess the effectiveness of video assisted teaching on safety measures while handling chemotherapy drugs on knowledge, attitude and practice of nurses in selected hospital , Kanyakumari District".** Ethics committee of Christian College of Nursing, Neyyoor reviewed anddiscussed the study proposal document submitted by you related to the content of the above referenced study and its meeting held on 05-06-2017.

The following ethical committee members were present at the meeting held on 05-06-2017.

S.No	Name	Profession	Position in the Committee
1.	Dr. SanthiAppavu	Nursing	Chair person
2.	Dr. Rajesh Sathya	Medical	Basic medical scientist
3.	Prof. Beaula Christa Bel	Nursing	Clinician
4.	Adv.DishoreJayananth	Legal	Legal Expert
5.	Mr.Jeya Kumar	Social	Social Scientist
6.	Dr. SharmilaJancy Rani	Management	Philosopher/Ethicist
7.	Er. Anand Paul GnanaJerin	Lay person	Community Person

After due ethical and scientific consideration, the Ethics committee has approved the above presentation submitted by you.

With Regards,

Date: 05-06-2017

Place: Neyyoor

……

Dr. SanthiAppavu,

Ethics Committee Chairperson,

Christian College of Nursing, Neyyoor.